

# SEQUENCE LISTING

<110> Tang, Y. Tom  
 Zhou, Ping  
 Goodrich, Ryle  
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 Asundi, Vinod  
 Zhao, Qing A.  
 Yang, Yonghong  
 Ren, Feiyan  
 Wang, Jian-Rui  
 Zhang, Jie  
 Drmanac, Radoje T.

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 Polypeptides

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 <151> 2000-08-23

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48





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 Tyr Tyr Pro Cys Glu His Val Ala Trp Ala Ala Asp Ala Arg Val Leu  
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Pro Arg Gly Lys Arg Arg Ala Met Glu Ala Gln Met Gln Ser Glu Ala	
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acc tac gcg gtg ggc gcc gct tgc acg ccc cgg gcg ccg cgg gag ctg 192  
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Ile	Glu	Gly	Glu	Glu	Glu	Arg	Val	Ser	Tyr	Tyr	Met	Glu	Gly	Leu	Phe	
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Asp	Glu	Arg	Ser	Arg	Gly	Tyr	Phe	Arg	Ile	Asp	Ser	Ala	Thr	Gly	Ala	
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Gly	Tyr	Glu	Val	Leu	Thr	Ile	Arg	Ala	Ser	Asp	Arg	Asp	Ser	Pro	Ile	
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Gln	Leu	Asn	Glu	Ser	Ser	Gly	Val	Val	Ser	Thr	Arg	Ala	Val	Leu	Asp	
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Ala Val Leu Ser Thr Thr Lys Asp Asp Val Phe Val Phe Asn Val Gln				
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Gln Glu Gln Ile Tyr Leu Asn Arg Thr Leu Leu Thr Thr Ile Ser Thr				
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Gln Arg Val Leu Pro Phe Asp Asp Asn Ile Cys Leu Arg Glu Pro Cys				
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Glu Asn Tyr Met Lys Cys Val Ser Val Leu Arg Phe Asp Ser Ser Ala				
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Pro Phe Leu Ser Ser Thr Thr Val Leu Phe Arg Pro Ile His Pro Ile				
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Gln Thr Gly Ser Lys Lys Ser Leu Asp Leu Thr Gly Pro Leu Leu Leu	
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Met Glu Ala Thr Ser Gly Gly Pro Thr Ser Phe Arg Leu Gln Ile Leu	
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Ser Val Met Leu Ser Gly Leu Arg Val Thr Asp Gly Glu Trp His His	
1765 1770 1775	
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Leu Leu Ile Glu Leu Lys Asn Val Lys Glu Asp Ser Glu Met Lys His	
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tgg cca cag acc aag ttc ggg cag ccg gct gcg gtg cca tgc cct aag Trp Pro Gln Thr Lys Phe Gly Gln Pro Ala Ala Val Pro Cys Pro Lys	2065						2070						2075						2080		6240
gga tcc gtt gga aat gcg gtc cga cac tgc agc ggg gag aag ggc tgg Gly Ser Val Gly Asn Ala Val Arg His Cys Ser Gly Glu Lys Gly Trp	2085						2090						2095						6288		
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agg gcc atg aat gag aag ctg agc cgc aat gag acg cag gtg gac ggc Arg Ala Met Asn Glu Lys Leu Ser Arg Asn Glu Thr Gln Val Asp Gly	2115						2120						2125						6384		
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ggc cac gtc ctt cag cac gag agc tgg cag cag ggc ttc gac ctg gca Gly His Val Leu Gln His Glu Ser Trp Gln Gln Gly Phe Asp Leu Ala	2165						2170						2175						6528		
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atc gtc acc gcc aac atg att ctt gct gtc gac atc ttt gac aag ttc Ile Val Thr Ala Asn Met Ile Leu Ala Val Asp Ile Phe Asp Lys Phe	2245						2250						2255						6768		



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Ala Pro Ile Ser Arg Arg Arg His Pro Asp Asp Ala Gly Gln Phe	
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1125 1130 1135	
gac gga gat act att ggt gtt aag ccc ttt aaa gtc ccc ctg ttt ggc	3571
Asp Gly Asp Thr Ile Gly Val Lys Pro Phe Lys Val Pro Leu Phe Gly	
1140 1145 1150	
cac tcg cag tgg aag ctt ctg gag ctg aag gga aag aat ctc ctg att	3619
His Ser Gln Trp Lys Leu Leu Glu Leu Lys Gly Lys Asn Leu Leu Ile	
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Asp Asp Asp Asp Asp Phe Ser Thr Ile Arg Asp Asp Thr Gly Lys Glu	
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Arg Val Pro Gly Thr Ala Cys Pro Leu Pro Leu Gly Ala Ser Gly Glu	
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Asn Arg Arg Tyr Gly Gly Ser Gly Met Pro Leu Leu Arg Cys Gly Arg	
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Thr Val Ser His Val Leu Ser Leu Leu Val Thr Trp Ala Ser Arg Phe	
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cct aga gaa ttc acc aat tta agc gga atc aga aat cag ggt gga acc 259  
Pro Arg Glu Phe Thr Asn Leu Ser Gly Ile Arg Asn Gln Gly Gly Thr  
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tgt tac ctc aat tcc ctt ctt cag act ctt cat ttc aca cct gaa ttc 307  
 Cys Tyr Leu Asn Ser Leu Leu Gln Thr Leu His Phe Thr Pro Glu Phe  
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aga gaa gct cta ttt tct ctt ggc cca gaa gag ctt ggt ttg ttt gaa 355  
Arg Glu Ala Leu Phe Ser Leu Gly Pro Glu Glu Leu Gly Leu Phe Glu  
70 75 80

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Asp Lys Asp Lys Pro Asp Ala Lys Val Arg Ile Ile Pro Leu Gln Leu  
85 90 95

cag cgc ttg ttt gct cag ctt ctg ctc tta gac cag gaa gct gca tcc 451  
Gln Arg Leu Phe Ala Gln Leu Leu Leu Leu Asp Gln Glu Ala Ala Ser  
100 105 110

aca gca gac ctc act gac agc ttt ggg tgg acc agt aat gag gaa atg 499  
Thr Ala Asp Leu Thr Asp Ser Phe Gly Trp Thr Ser Asn Glu Glu Met  
115 120 125

agg caa cat gat gtg cag gaa ctg aat cga atc ctc ttc agc gct ttg 547  
Arg Gln His Asp Val Gln Glu Leu Asn Arg Ile Leu Phe Ser Ala Leu  
130 135 140 145

gaa act tct tta gtt ggg acc tcc ggt cat gac ctc atc tat cgt ctg 595  
Glu Thr Ser Leu Val Gly Thr Ser Gly His Asp Leu Ile Tyr Arg Leu  
150 155 160

tac cat gga acc att gtt aac cag att gtt tgt aaa gaa tgt aag aac 643  
Tyr His Gly Thr Ile Val Asn Gln Ile Val Cys Lys Glu Cys Lys Asn







Ser 850	Asp	Val	Gln	Pro	Gly 855	Thr	Glu	Met	Glu	Ile	Val	Val	Glu	Glu	Thr 865	
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Ile	Ser	Val	Arg	Asp	Cys	Leu	Lys	Leu	Met	Leu	Lys	Lys	Ser	Gly	Leu	
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caa	gga	gat	gcc	tgg	cat	tta	cga	aaa	atg	gat	tgg	tgc	tat	gaa	gct	2803
Gln	Gly	Asp	Ala	Trp	His	Leu	Arg	Lys	Met	Asp	Trp	Cys	Tyr	Glu	Ala	
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Gly	Glu	Pro	Leu	Cys	Glu	Glu	Asp	Ala	Thr	Leu	Lys	Glu	Leu	Leu	Ile	
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tgt	tct	gga	gat	act	ttg	ctt	tta	att	gaa	gga	caa	ctt	cct	cct	ctg	2899
Cys	Ser	Gly	Asp	Thr	Leu	Leu	Leu	Ile	Glu	Gly	Gln	Leu	Pro	Pro	Leu	
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ggc	ttc	ctg	caa	gtg	ccc	atc	tgg	tgg	tac	cag	ctt	cag	ggc	ccc	tca	2947
Gly	Phe	Leu	Gln	Val	Pro	Ile	Trp	Trp	Tyr	Gln	Leu	Gln	Gly	Pro	Ser	
930					935					940					945	
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Gly	His	Trp	Glu	Ser	His	Gln	Asp	Gln	Thr	Asn	Cys	Thr	Ser	Ser	Trp	
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Gly	Arg	Val	Trp	Arg	Ala	Thr	Ser	Ser	Gln	Gly	Ala	Ser	Gly	Asn	Glu	
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Pro	Ala	Gln	Val	Ser	Leu	Leu	Tyr	Leu	Gly	Asp	Ile	Glu	Ile	Ser	Glu	
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Asp	Ala	Thr	Leu	Ala	Glu	Leu	Lys	Ser	Gln	Ala	Met	Thr	Leu	Pro	Pro	
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Phe	Leu	Glu	Phe	Gly	Val	Pro	Ser	Pro	Ala	His	Leu	Arg	Ala	Trp	Thr	
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gtg	gag	agg	aag	cgc	cca	ggc	agg	ctt	tta	cga	act	gac	cgg	cag	cca	3235
Val	Glu	Arg	Lys	Arg	Pro	Gly	Arg	Leu	Leu	Arg	Thr	Asp	Arg	Gln	Pro	
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ctc	agg	gaa	tat	aaa	cta	gga	cgg	aga	att	gag	atc	tgc	tta	gag	ccc	3283
Leu	Arg	Glu	Tyr	Lys	Leu	Gly	Arg	Arg	Ile	Glu	Ile	Cys	Leu	Glu	Pro	
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Leu	Gln	Lys	Gly	Glu	Asn	Leu	Gly	Pro	Gln	Asp	Val	Leu	Leu	Arg	Thr	
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 Glu Ser Ser Ile Pro Lys Thr Val Ser His Val Leu Ser Leu Leu Val  
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acc tgg gcc tca cgg ttt ctc gtc agc ccc gtc act gat ggg aag cag 4147  
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 gtgccaggtg tgtccagagg agccca atg ggc agt gag gca gcc atg ggg ctg 173  
 Met Gly Ser Glu Ala Ala Met Gly Leu  
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gat gca ctg gtg ccc ctg gca gtg aca gtg gcc atc ttc ctg ctc ctg 221  
 Asp Ala Leu Val Pro Leu Ala Val Thr Val Ala Ile Phe Leu Leu Leu  
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 Val Asp Leu Met Gln Gln His Gln Arg Trp Thr Ala Arg Tyr Pro Pro  
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ggc ccc ctg cca ctg ccc ggg ctg ggc aac ttg ctg cat gtg gac ttc 317  
 Gly Pro Leu Pro Leu Pro Gly Leu Gly Asn Leu Leu His Val Asp Phe  
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cag aac ata tac acc ttc aac cag gtg agg gag gag gtc ctg agg atc 365  
 Gln Asn Ile Tyr Thr Phe Asn Gln Val Arg Glu Glu Val Leu Arg Ile  
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ccc cac cac cag caa aca tgg gtg gtg ggt gga gcc aca gtc tgg aca 413  
 Pro His His Gln Gln Thr Trp Val Val Gly Gly Ala Thr Val Trp Thr  
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aga agc cag gct gag aag ggg aag cag att tga gggacttc ctgggggagg 464  
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90

95

100

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His Glu Ala Glu Glu Gly His Gly Ile Thr His Ser Cys Ala Val Cys  
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Ile Leu Cys Gly Pro Ser Arg Glu Gly Asp Ser Pro Val Ala Met Gly  
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Met Thr Arg Met Leu Leu Cys Ser Leu Ser Asp Lys Leu Cys Val  
40 45 50

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Ile Gln Glu Lys Gln Tyr Glu Val Ile Ile Val Pro Thr Leu Leu Val  
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 Thr Asp Ser Ser Lys Thr Asp Thr Leu Asn Ser Ser Ser Ser Gly Thr  
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 Thr Ala Ser Ser Leu Glu Lys Ile Lys Val Gln Ala Asn Ala Pro Leu  
 65 70 75 80  
 att aaa ccc cca gca cac cca tct gct atc ctc acg gtc ctg aga aag 645  
 Ile Lys Pro Pro Ala His Pro Ser Ala Ile Leu Thr Val Leu Arg Lys  
 85 90 95  
 cca aac cct cca cca cct cct cca agg ttg aca cct gtg aag tgt gaa 693  
 Pro Asn Pro Pro Pro Pro Pro Pro Arg Leu Thr Pro Val Lys Cys Glu  
 100 105 110  
 gac ccc aaa agg gtg gtt cca act gcc aat cct gta aaa acc aat ggc 741  
 Asp Pro Lys Arg Val Val Pro Thr Ala Asn Pro Val Lys Thr Asn Gly  
 115 120 125  
 acc ctt cta cga aat gga ggc tta cca ggt gga cct aac aaa att cca 789

[illegible]



